

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

AFSC/REFM: Bomb-produced age validation study

**1.2. Summary description of the data:**

Fish age validation with bomb-produced radiocarbon ( $^{14}\text{C}$ ) requires a known-age Delta $^{14}\text{C}$  reference chronology

spanning the era of a marine increase in bomb-produced  $^{14}\text{C}$  (1950s to 1960s).

Concordance between otolith Delta $^{14}\text{C}$

in a validation sample and the reference chronology indicates accurate test ages. Here we compare a new Delta $^{14}\text{C}$

reference chronology from the eastern Bering Sea and a previously established reference from the Gulf of Alaska

with otolith Delta $^{14}\text{C}$  in two validation species, eastern Bering Sea yellowfin sole (*Limanda aspera*)

and Gulf of Alaska northern rockfish (*Sebastes polyspinis*). Our goals were twofold: to validate

the age determination methods for northern rockfish and yellowfin sole using comparisons within oceanic basins,

and to explore the outcome of making naive comparisons of these validation data sets to reference chronologies

across oceanic basins. We present a information-theoretic approach to hypothesis testing and

use Bayesian data analysis with Markov Chain Monte Carlo simulation as a probabilistic framework

to quantitatively estimate age determination bias and its uncertainty. Based on within-basin comparisons

we concluded that estimated ages for eastern Bering Sea yellowfin sole and Gulf of

Alaska northern rockfish

were accurate. We further concluded that there were important differences in otolith  
14C uptake between fish

from the two ocean basins.

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

1987 to 2004

**1.5. Actual or planned geographic coverage of the data:**

W: -180, E: -150, N: 60, S: 52

Gulf of Alaska

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

Table (digital)

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

Instrument: Tandetron Accelerator Mass Spectrometer system, Ecomet3 Grinder/  
polisher, Low-speed Isomet saw

Platform: na

Physical Collection / Fishing Gear: na

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

Metadata Coordinators MC

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

**2.4. E-mail address:**

AFSC.metadata@noaa.gov

**2.5. Phone number:****3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**

Craig Kastle

**3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

No

**4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):**

Unknown

**5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Process Steps:

- See methods in FGDC metadata.

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

Data from RACE is proofed by normal protocols routinely used on survey data. Data generated by the Age and Growth program data (age estimates and associated codes) is proofed for typing errors, tested for precision with a 20% replicate, and accuracy is evaluated in comparisons of fish size vs. age. The Final ages were evaluated for error by the Age (confirmation by reader A or L). Radiocarbon values are checked for accuracy by comparing two different sets of calculations, one by WOH, NAOAMS, and one by Craig Kastle at AFSC.

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

### 6.1. Does metadata comply with EDMC Data Documentation directive?

Yes

#### 6.1.1. If metadata are non-existent or non-compliant, please explain:

### 6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

#### 6.2.1. If service is needed for metadata hosting, please indicate:

### 6.3. URL of metadata folder or data catalog, if known:

<https://inport.nmfs.noaa.gov/inport/item/21678>

### 6.4. Process for producing and maintaining metadata

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: <https://inport.nmfs.noaa.gov/inport/downloads/data-documentation-procedural-directive.pdf>

## 7. Data Access

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

### 7.1. Do these data comply with the Data Access directive?

Yes

#### 7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

#### 7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

### 7.2. Name of organization of facility providing data access:

National Centers for Environmental Information - Silver Spring, Maryland

#### 7.2.1. If data hosting service is needed, please indicate:

no

**7.2.2. URL of data access service, if known:**

<http://data.nodc.noaa.gov/cgi-bin/iso?id=gov.noaa.nodc:0134853>

**7.3. Data access methods or services offered:**

na

**7.4. Approximate delay between data collection and dissemination:**

unknown

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

NA

**8. Data Preservation and Protection**

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

Other

**8.1.1. If World Data Center or Other, specify:**

NCEI

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**

Alaska Fisheries Science Center - Seattle, WA

**8.3. Approximate delay between data collection and submission to an archive facility:**

unknown

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

NA

**9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*